



US009408730B2

(12) **United States Patent**
Sheldon et al.

(10) **Patent No.:** **US 9,408,730 B2**
(45) **Date of Patent:** ***Aug. 9, 2016**

(54) **SECURED STRAND END DEVICES**

A61F 2/95; A61F 2/90; A61F 2220/0058;
A61F 2002/061; A61F 2002/9665; A61F
2002/9534; D04C 1/06; D03D 41/00; D03D
3/02; D06C 7/00; B23K 26/20; B23K
2203/14; B23K 2201/32; Y10T 29/49849;
D10B 2509/06

(71) Applicant: **IDev Technologies, Inc.**, Webster, TX
(US)

(72) Inventors: **Jeffery Sheldon**, League City, TX (US);
Richard Booth, Friendswood, TX (US);
Kenneth M. Bueche, Friendswood, TX
(US)

See application file for complete search history.

(73) Assignee: **IDev Technologies, Inc.**, Webster, TX
(US)

(56) **References Cited**

U.S. PATENT DOCUMENTS

619,403 A 2/1899 Grant et al.
1,945,195 A 1/1934 Kellems

(Continued)

FOREIGN PATENT DOCUMENTS

AU 10748/99 8/1999
AU 2007309081 12/2012

(Continued)

OTHER PUBLICATIONS

Adam et al., "A New Design of the Esophageal Wallstent
Endoprosthesis Resistant to Distal Migration," *AJR*, 170:1477-1481,
Jun. 1998.

(Continued)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

This patent is subject to a terminal dis-
claimer.

(21) Appl. No.: **15/001,117**

(22) Filed: **Jan. 19, 2016**

(65) **Prior Publication Data**

US 2016/0128851 A1 May 12, 2016

Related U.S. Application Data

(60) Continuation of application No. 14/601,152, filed on
Jan. 20, 2015, which is a division of application No.
14/289,519, filed on May 28, 2014, now Pat. No.
8,966,733, which is a continuation of application No.

(Continued)

(51) **Int. Cl.**

A61F 2/06 (2013.01)
A61F 2/86 (2013.01)
A61F 2/90 (2013.01)

(52) **U.S. Cl.**

CPC ... **A61F 2/86** (2013.01); **A61F 2/90** (2013.01);
A61F 2220/0058 (2013.01)

(58) **Field of Classification Search**

CPC A61F 2/86; A61F 2/966; A61F 2/06;

Primary Examiner — David Bryant

Assistant Examiner — Jun Yoo

(74) *Attorney, Agent, or Firm* — Knobbe Martens Olson &
Bear LLP

(57) **ABSTRACT**

A woven, self-expanding stent device has one or more strands
and is configured for insertion into an anatomical structure.
The device includes a coupling structure secured to two dif-
ferent strand end portions that are substantially aligned with
each other. The two different strand end portions include
nickel and titanium. The coupling structure is not a strand of
the device.

19 Claims, 11 Drawing Sheets

